

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1 **Claim 1-65.** (Canceled)

1 **Claim 66-68.** (Canceled)

1 **Claim 69-89.** (Canceled)

1 **Claims 90.-108.** (Canceled)

1 **Claim 109.** (Previously presented) A device comprising:

2 a first substrate having a first surface;

3 a second substrate having a second surface, said first substrate and said second
4 substrate being aligned such that said first surface opposes said second
5 surface;

6 a first organic layer attached to said first surface, wherein said first organic layer
7 comprises a first recognition moiety which is bound to said first organic layer,
8 interacts with said analyte, and is selected from an amine, an antibody, a
9 nucleic acid, biotin, a drug moiety, a chelating agent, a crown ether, and a
10 cyclodextrin; and

11 a mesogenic layer between said first substrate and said second substrate, said
12 mesogenic layer comprising a plurality of mesogenic compounds.

1 **Claim 110.** (Previously presented) The device according to claim 109, further

2 comprising an interior portion defined as the area between said first surface and said

3 second surface, wherein said interior portion allows communication between said analyte

4 and said recognition moiety.

1 **Claim 111.** (Previously presented) The device according to claim 109, wherein said
2 organic layer is a rubbed polymer.

1 **Claim 112.** (Canceled)

1 **Claim 113.** (Previously presented) The device according to claim 109, wherein said
2 recognition moiety further comprises a biomolecule comprising a member selected from
3 a polysaccharide and a combination of a polysaccharide and a protein.

1 **Claims 114.-117.** (Canceled)

1 **Claim 118.** (Previously presented) A device for detecting an interaction between an
2 analyte and a first or second recognition moiety, said device comprising:
3 a first substrate having a first surface;
4 a first organic layer attached to said first surface wherein said first organic layer
5 comprises a first recognition moiety which is bound to said first organic layer,
6 interacts with said analyte, and is selected from an amine, an antibody, a
7 nucleic acid, biotin, a drug moiety, a chelating agent, a crown ether, and a
8 cyclodextrin; and
9 a second substrate having a second surface, said first substrate and said second
10 substrate being aligned such that said first surface opposes said second
11 surface;
12 a second organic layer attached to said first surface, wherein said second organic
13 layer comprises a second recognition moiety, bound to said first organic layer,
14 which interacts with said analyte, wherein said second recognition moiety is
15 selected from an amine, a carboxylic acid, a biomolecule, a drug moiety, a
16 chelating agent, a crown ether, and a cyclodextrin; and
17 a mesogenic layer between said first substrate and said second substrate, said
18 mesogenic layer comprising a plurality of mesogens, wherein at least a portion
19 of said plurality of mesogens undergo a detectable switch in orientation upon

20 interaction between said first recognition moiety and said analyte, whereby
21 said analyte is detected.

1 **Claim 119.** (Previously presented) The device according to claim 118, wherein said
2 analyte is a member selected from the group consisting of acids, bases, avidin, organic
3 ions, inorganic ions, pharmaceuticals, herbicides, pesticides, chemical warfare agents,
4 noxious gases, biomolecules and combinations thereof.

1 **Claim 120.** (Previously presented) The device according to claim 118, wherein said
2 interaction is a member selected from the group consisting of covalent bonding, ionic
3 bonding, hydrogen bonding, van der Waals interactions, repulsive electronic interactions,
4 attractive electronic interactions, hydrophobic interactions, hydrophilic interactions and
5 combinations thereof.

1 **Claim 121.** (Previously presented) The device according to claim 118, wherein said
2 first organic layer comprises a self-assembled organosulfur or organosilane monolayer
3 bound to said first surface; and wherein said first recognition moiety is bound to said self-
4 assembled monolayer.

1 **Claim 122.** (Previously presented) The device according to claim 118, wherein said
2 second organic layer comprises a self-assembled organosulfur or organosilane monolayer
3 bound to said second substrate; and wherein said second recognition moiety is bound to
4 said self-assembled monolayer.

1 **Claim 123.** (Canceled)

1 **Claim 124.** (Previously presented) The device according to claim 109, wherein said
2 first organic layer comprises a self-assembled organosulfur or organosilane monolayer
3 bound to said first surface; and wherein said first recognition moiety is bound to said self-
4 assembled monolayer.

1 **Claim 125.** (Currently amended) A device ~~according to claim 66,~~ for detecting an
2 interaction between an analyte and a first recognition moiety, said device comprising:
3 a first substrate having a first surface;
4 a second substrate having a second surface, said first substrate and said second
5 substrate being aligned such that said first surface opposes said second
6 surface;
7 a first organic layer attached to said first surface, wherein said first organic layer
8 comprises a first recognition moiety which is bound to said first organic layer
9 and interacts with said analyte, and wherein said first recognition moiety is
10 selected from an amine, an antibody, a nucleic acid, biotin, a drug moiety, a
11 chelating agent, a crown ether, and a cyclodextrin; and
12 a mesogenic layer between said first substrate and said second substrate, said
13 mesogenic layer comprising a plurality of mesogens, wherein at least a portion
14 of said plurality of mesogens undergo a detectable switch in orientation upon
15 interaction between said first recognition moiety and said analyte, whereby
16 said interaction of said analyte is detected.